Iowa Trails 2000

CHECKLIST FOR DETERMINING PROJECT CONFORMANCE WITH IOWA DOT BICYCLE ACCOMMODATION GUIDANCE FOR IOWA'S STATE HIGHWAYS

On May 11, 1999, the Iowa Transportation Commission adopted highway planning and programming guidance to be used as the basis for decision-making relative to Iowa's primary highway system improvements and investments. This guidance included policy direction relative to bicycle and pedestrian accommodations, i.e. when bicycle and pedestrian accommodation needs to be incorporated into a planned highway improvement project. A copy of the adopted guidance text is included at the end of this discussion.

The following "checklist" can be used by Iowa DOT and/or MPO/RPA staff during project planning to evaluate whether bicycle accommodation is warranted within a highway corridor proposed for improvement. This information can assist in evaluation of the <u>type</u> of accommodation to be provided (on-road, separated, etc.), if accommodation is determined to be warranted. The checklist is subdivided into two parts, to reflect the criteria established in the adopted accommodation guidance: 1) planning-based thresholds and 2) trip generation-based thresholds.

<u>Planning-Based Thresholds</u>

- *Does the highway facility serve a rural community/communities with limited availability of facilities for bicycle transportation? If so, how?* _____
  _____
  _____

- *Does the highway provide primary access to a park, recreational area or other significant destination? If so, how?* _____
  _____
  _____

- *Does the highway provide unique access across a natural or man-made barrier (i.e., bridges over rivers, railroads, or over/under access-controlled facilities)? If so, how?*
  _____
  _____
  _____

- *Does the highway provide a connection in an otherwise continuous bicycle facility? If so, how?* _____
  _____
  _____

- *Does the highway project negatively affect the recreation or transportation utility of an independent bikeway or trailway? If so, how?* _____
  _____
  _____

- *Are there parallel facilities that are better suited to provide bicycle accommodation? If there are parallel facilities, do they sufficiently serve the bicycle traffic generators?*
  _____
  _____
  _____

- *What are the long-range plans (state, city, RPA, MPO, etc.) for bicycle accommodation in the area? Does the corridor provide a link in the planned bicycle facilities? Describe.*
  _____
  _____
  _____

- *Are there safety issues with the existing or proposed accommodations? Describe.*
  _____
  _____
  _____

Trip Generation-Based Thresholds

The Iowa DOT accommodation guidance indicates:

> "The department will also provide further bicycle accommodation within the highway corridor if a Regional Planning Affiliation (RPA) or Metropolitan Planning Organization (MPO) can provide a forecast of bicycle traffic five years after project completion that shows the volume of two-way bicycle traffic averages at least 25 bicycles per day during the peak three months of the bicycling season and motor vehicle traffic on the highway or street exceeds 1,000 vehicles per day….The department will provide a methodology to the RPAs and MPOs to follow when developing the travel forecasts and when evaluating alternatives."

As part of the special studies for *Iowa Trails 2000*, the issue of how to determine if the "25 bicycle trips per day" threshold would be met for a particular corridor was addressed. Iowa DOT staff involved in implementing the bicycle accommodation guidance indicated that the means for estimating daily trip generation should be "user-friendly" for RPA and MPO staff, while providing consistency in methodology for determining conformance with the "25-trips" threshold.

The FHWA "Guidebook on Methods to Estimate Non-Motorized Travel" describes a number of methods for estimating bicycle trip generation. However, many of the methods are either comparison-based (i.e. not numeric determinations) or require more input data than is available for most communities in Iowa. For example, because there is limited data available on bicycle trip generation and origins/destinations for bicycles in Iowa, it would be difficult to establish a statistical-based computer forecast model for predicting bicycle trips, similar to

what is used for motor vehicles. In addition, computer modeling requires use by an experienced forecaster and periodic updating of data to maintain model validity – all of which would be difficult to provide at the MPO/RPA staff level and which contradict the desired "user friendly" criteria for estimating trip generation.

Research into the origin of the "25-trips" criteria included in the Iowa DOT accommodation guidance, showed that this threshold is also used in Illinois and Wisconsin as the basis for bicycle accommodation provisions. Based on information obtained from those states on how they determine if the 25-trips criteria is being met, the following methodology is recommended for use by Iowa MPO/RPA staff in determining if a corridor would comply with the bicycle trip generation criteria established in the bicycle accommodation guidance:

Methodology for Estimating Conformance with 25 Bicycle Trips/Day Criteria

The potential number of daily bicycle trips along a highway corridor is primarily dependent upon the proximity of "trip generators." The corridor area should be evaluated to determine if the following potential trip generators are present:

Generators (Adjacent)	Yes	No	Generators (within 2 miles)	Yes	No
**Residential area (50+ homes) [(1)]			Parks		
**Park/recreation area			Recreation areas		
School/campus			Existing bicycle trail		
Library			Planned bicycle trail		
Public transportation facilities			City, town, or subdivision (50+ homes) [(1)]		
**Intersecting trail facility					
Shopping center					
Employment center					

** Required generator (see text)
[(1)] 50+ homes = A concentration of 50 or more residential units in a town, and/or in (a) rural subdivision(s) with lots 1 acre or less in size adjacent to the highway corridor.

If two or more of the above trip generation sources – one of which must be a "required generator" (designated with a ** in the above table) – are present in the vicinity of the highway corridor, the 25 trips/day criteria will likely be met.

One additional situation where the 25 trips/day criteria would likely be met is in a highway corridor located in a scenic area (e.g. along the Mississippi River valley), where the corridor itself could be a bicycling destination. Touring bicycle traffic should be anticipated in this situation, especially if communities, parks, or other destinations are located a maximum of 10 to 15 miles apart along the corridor. A special evaluation of the potential scenic/recreational value of such corridors for bicycle touring may be warranted as part of the review process for providing trail accommodations in the corridor.

Additional Information

One or more maps/figures showing the relationship of the highway corridor to other roadways and land uses in the vicinity should be provided. These figures should show:

- The highway corridor segment being considered for bicycle accommodation.

- Locations of bicycle trip generators adjacent to/in the vicinity of the corridor (as listed in the checklist table for trip generation), including specific information that would assist in confirming the potential number of bicycle trips generated. For example, notation on the figures should show the number of dwelling units in each residential area, number of students at each school, average daily or annual park attendance figures, etc.

- Alternative corridors considered for providing bicycle accommodation, with notation on the figure (or on a separate sheet) explaining why each alternative considered was not preferred, when compared to the highway corridor.

Decision-Making Process

The Iowa DOT will consider the following in its decision-making process for bicycle accommodation within a highway corridor:

- Meets the 25 trips/day criteria (checklist criteria) and/or
- Meets the planning-based thresholds
- No feasible alternative routes are available
- It is feasible to provide accommodation within the highway corridor

IOWA DEPARTMENT OF TRANSPORTATION

BICYCLE AND PEDESTRIAN ACCOMMODATION GUIDANCE

ADOPTED BY THE
IOWA TRANSPORTATION COMMISSION

May 11, 1999

BICYCLE AND PEDESTRIAN ACCOMMODATION GUIDANCE

Iowa's roadways serve several modes of transportation including trucks, automobiles, buses, motorcycles, bicycles, and pedestrians. Bicyclists carry the same rights and responsibilities, as motor vehicle drivers are currently legal on virtually all public roadways in Iowa.

It is federal transportation policy to "promote increased use of bicycling, and encourage planners and engineers to accommodate bicycle and pedestrian needs in designing transportation facilities for urban and suburban areas." The Iowa Department of Transportation will consider the needs of all transportation users and also encourage metropolitan and regional planning agencies to plan for bicycle and pedestrian accommodations in their areas.

Bicycle Accommodation Guidance

The department's policy is to provide safe, convenient and adequate bicycle facilities along the state highway system. As part of the development of every highway construction project, the department will consider the following situations to determine whether further bicycle accommodation is needed within the highway corridor.

- When highways in and around rural communities are the primary means of bicycle transportation due to the limited availability of other facilities.

- When the highway provides primary access to a park, recreational area or other significant destination.

- When the highway provides unique access across a natural or man-made barrier, i.e., bridges over the rivers or roads or over/under access-controlled facilities and roadways.

- The highway provides a connection in an otherwise continuous bicycle facility.

- When the highway project negatively affects the recreational or transportation utility of an independent bikeway or trail. Highway projects will negatively affect at-grade paths and trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossings at-grade, or when the widening of the roadway prohibits sufficient time for safe crossings.

The department will also provide further bicycle accommodation within the highway corridor if a Regional Planning Affiliation (RPA) or Metropolitan Planning Organization (MPO) can provide a forecast of the bicycle traffic five years after project completion that shows the volume of two-way bicycle traffic averages at least 25 bicycles per day during the peak three months of the bicycling season and motor vehicle traffic on the highway or street exceeds 1,000 vehicles per day. The forecast of bicycle and motor vehicle traffic will be reviewed and approved by the department. In addition to the forecast, the RPA or MPO will show through an analysis of alternatives, that the best alternative is accommodation within the state highway corridor. The department will provide a methodology to the RPAs and MPOs to follow when developing the travel forecasts and when evaluating alternatives.

Design Guidance

The department will utilize the *AASHTO Guide for the Development of Bicycle Facilities* as the basis for design guidance. Further guidance is provided in FHWA's *Selecting Roadway Design Treatments to Accommodate Bicycles*.

The location of the bicycle accommodation may be on the highway (e.g. bike lanes, paved shoulders, etc.) or off the highway as a separated bicycle path. In most cases, the preferred location of bicycle accommodation is on the highway. The *AASHTO Guide for the Development of Bicycle Facilities* lists several reasons bicycle accommodations are preferred on the highway:

- At intersections, motorists entering or crossing the highway often will not notice bicyclists on separated bicycle paths approaching from their right, as they are not expecting contra-flow vehicles. Motorists turning to exit the highway may likewise fail to notice the bicyclist. Even bicycles coming from the left often go unnoticed, especially when sight distances are limited.

- Signs posted for roadway users are backwards from contra-flow bike traffic on separated bicycle paths, and therefore these cyclists are unable to read to read the information without stopping and turning around.

- Many bicyclists will use the highway instead of the separated bicycle path because they have found the highway to be more convenient, better maintained, or feel safer riding on the road.

- Although the separated bicycle path should be given the same priority through intersections as the parallel highway, motorists falsely expect bicyclists to stop or yield at all cross-streets and driveways. Efforts to require or encourage bicyclists to yield or stop at each cross street and driveway are inappropriate and frequently ignored by bicyclists.

- Stopped cross-street motor vehicle traffic or vehicles exiting side streets or driveways may block the separated bicycle path crossing.

In some cases, a separated bicycle path may be appropriate due to the factors such as traffic volume, type of motor vehicles, traffic speed, and skill level of users.

Types of Bicycle Improvements/Design Treatments

There are several ways in which roadways can be constructed to enhance bicycle transportation. Adding or improving shoulders can often be a feasible way to accommodate bicycles in rural areas. Bicycle lanes and wide curb lanes are the primary improvements for urban areas, where available road space is a concern. The following design treatments are extensively explained in the *AASHTO Guide for the Development of Bicycle Facilities.*

- **Shoulders**: A paved portion of the roadway to the right of the edge stripe. AASHTO recommends paved shoulders specifically for bicycle accommodation improvements in rural areas. Shoulders will be paved in accordance with design standards and paved shoulder studies. Bicycle traffic on a paved shoulder will typically be one-directional with the flow of traffic; therefore both shoulders will be paved when providing accommodation for bicyclists.

- **Wide Curb Lanes**: An outside travel lane on highway sections with a width of greater than 12 feet (14 feet typically). Used primarily in urban areas, the wide curb lanes can allow road use by both bicyclists and motorists without conflict.

- **Bicycle Lane**: A portion of the roadway, which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes should always be one-way facilities carrying traffic in the same direction as adjacent motor vehicle traffic, and they should not be placed between parking spaces and the curb. Bicycle lanes offer a channelizing effect on motor vehicles and bicycles.

- **Separated Bicycle Path**: A bikeway physically separated from motorized vehicular traffic by an open space or barrier, and either within the highway right-of-way or within an independent right-of-way.

Incidental design factors that improve the safety of bicycle travel will be considered on all state highway improvements. These include, but are not limited to:

- Drainage grates and utility covers suitable for bicycle travel
- At-grade railroad crossings that accommodate bicycle movements

Implementation

Consideration of bicycle accommodation will occur at all stages of planning and project development. When feasible, the recommended design treatments will be implemented as part of new construction, reconstruction, or preservation of the roadway.

Accommodations requiring grading and/or the purchase of right-of-way will normally not be considered as part of a highway preservation improvement. Consideration of bicycle accommodation will not occur as part of highway maintenance activities. When accommodation is provided as part of a highway improvement project, the cost for the facility will be considered an additional highway construction cost.

Providing bicycle accommodation independent of a highway construction project will be considered with construction funding obtained from local jurisdictions or other federal and non-road use tax state sources.

Maintenance

- The department will be responsible for the ongoing maintenance of bicycle facilities within the state highway right-of-way.
- The department will not be responsible for maintenance of bicycle facilities within the state highway right-of-way.

Pedestrian Accommodation Guidance

The department will consider the impacts to pedestrian accommodation at all stages of the project development process and encourage pedestrian accommodation efforts when impacted by highway improvements. Cost of these accommodations made at the time of the highway improvement will be considered additional roadway construction costs. Providing pedestrian accommodation independent of a highway construction project will be considered with construction funding obtained from local jurisdictions or other federal and non-road use tax state sources.